Computing Curriculum
Year 3 and 4 – Cycle A

Purpose of study

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

Aims

The national curriculum for computing aims to ensure that all pupils:

♣ can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation

♣ can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems

♣ can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems

♣ are responsible, competent, confident and creative users of information and communication technology.

Intent

At Caythorpe, we use Teach Computing, provided by the NCCE, as the basis of our sequence of learning.

All learning outcomes can be described through a high-level taxonomy of ten strands, ordered alphabetically as follows:

- Algorithms — Be able to comprehend, design, create, and evaluate algorithms
- Computer networks — Understand how networks can be used to retrieve and share information, and how they come with associated risks
- Computer systems — Understand what a computer is, and how its constituent parts function together as a whole
- Creating media — Select and create a range of media including text, images, sounds, and video
- Data and information — Understand how data is stored, organised, and used to represent real-world artefacts and scenarios
- Design and development — Understand the activities involved in planning, creating, and evaluating computing artefacts
- Effective use of tools — Use software tools to support computing work
- Impact of technology — Understand how individuals, systems, and society as a whole interact with computer systems
- Programming — Create software to allow computers to solve problems
- Safety and security — Understand risks when using technology, and how to protect individuals and systems

The taxonomy provides categories and an organised view of content to encapsulate the discipline of computing. Whilst all strands are present at all phases, they are not always taught explicitly.

Due to our mixed year groups, we have adapted the structure of the Teach Computing scheme. The 'Computing Systems and Networks' unit is combined for Year 1/2, Year 3/4, and Year 5/6. This is then repeated in each cycle; it is expected that children will be completely secure in their knowledge by the end of each phase. This approach allows all children in the class to learn the key knowledge which underpins all the other units. Some of the units have been reordered to ensure that prior knowledge that the children need is taught before moving onto more complex learning. Our use of flashbacks allows children to revisit knowledge regularly so that they can remember key knowledge more effectively and do not forget.

Our pedagogical approach allows children to work collaboratively towards a project-based goal. The sequence of learning is taught through key concepts and vocabulary. In the first instance, children are encouraged to unplug from technology and explore ideas in other familiar real-life contexts before applying this to the new technological context. Children are continually encouraged to work with physical computing to enhance learning. As well as this, they apply knowledge from the arts alongside computing to achieve a goal. In programming our sequence allows children to explore, read and comprehend block based and text base code; leading them to successfully being able to write code.

EYFS

There are no statutory requirements to use and learn about technology in EYFS. However, at Caythorpe we believe technology can play a role in supporting early communication, language and literacy. It can offer new learning opportunities through ebooks, digital cameras, programmable toys, apps, computers with appropriate software, iPads and video calling. Thus, by the end of the year the pupils at Caythorpe have a range of technologies available to them within the nursery's continuous provision which they can choose to use whenever they wish to for their own purposes. Whilst children are developing their understanding of these technologies, practitioners should be drawing their attention to the technology that's being used in the world around them, from mobile phones to pedestrian crossings. Practitioners should also provide a positive role model by showing children that adults use technology for their own purposes and by talking to the children about the value they place on this use. In this way children will see technology used for real purposes and will develop the understanding that technologies are tools to be used when they're needed and that they're not used just for the sake of it. They will develop a positive disposition towards technology and a motivation to use it both now and in the future.

Vocabulary: By the end of EYFS they will be able to *use the words…*		Outcomes for the end of EYFS: *Children will be able to:*
Tablet Phone Computer Keyboard Keys Touch screen Code/ coding A range of vocabulary linked to appliances such as tills, calculators, etc. Switch Safe Safety Online Internet Danger	Kind Respect Permission Personal information Swipe Technology App games	▪ Children will use and access a range of technology equipment in the learning environment. ▪ For pieces of equipment that the children are expected to use with regularity such as CD player or tablet, children need to be taught how to turn it on and use it as it is intended. ▪ Children will know how to take care of electronic equipment – away from water, not left on the floor et. ▪ Children will know that technology is used throughout the whole of our world and should discuss in class time instances of use such as tills, medical equipment, computers. ▪ Children will be able to verbalise and remember technology that is in their homes and familiar environments. ▪ Role play planning needs to enable pupils to use technology in play activities and observations should assess where they use them and the language and skills they reflect during their self-initiated activities -consider the 'Domestic Role-play' area to have an office, telephone, iPad. ▪ Children will know specific uses for computers. ▪ Children will know how to swipe on a screen and access an app that they a) self -elect b) are directed to select. ▪ Children will know how to access and use independently a range of appropriate apps that support learning in the class. ▪ Children will know that there are some very positive uses of computers however sometimes there are scary things that happen when you are on games or on the internet. ▪ Children will know that you are responsible for being kind to each other when online. ▪ Children will have watched an adult modelling the use of Scratch to do simple coding exercise. ▪ Children will have had experience of directing each other to create a sequence of instructions. ▪ Adults will have taught children to undertake a simple coding procedure on Scratch to do a simple action. ▪ Children need to learn a simple coding sequence and to explain how they completed it

Attainment targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study. Schools are not required by law to teach the example content in [square brackets].

Key stage 1 Pupils should be taught to:

♣ understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions

♣ create and debug simple programs

♣ use logical reasoning to predict the behaviour of simple programs

♣ use technology purposefully to create, organise, store, manipulate and retrieve digital content

♣ recognise common uses of information technology beyond school

♣ use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

Key stage 2 Pupils should be taught to:

♣ design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts

♣ use sequence, selection, and repetition in programs; work with variables and various forms of input and output

♣ use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs

♣ understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration

♣ use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content

♣ select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information

♣ use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

	Autumn		Spring		Summer	
Topic	**Computer Systems and Networks – Connecting Computers and the Internet**	**Creating Media –Frame Animation**	**Programming A – Sequencing sounds**	**Data – Branching Database**	**Creating Media – Audio Production**	**Programming A – Repetition in shapes**

Progression	This combines the year 3 and year 4 units for 'computer systems and networks' from Teach Computing and the same pieces of procedural and declarative knowledge are taught in both cycles due to the importance of the knowledge: underpinning the rest of the computing curriculum. It is expected that by the end of year 4 all children will know and remember the key knowledge outlined.	This unit progresses students' knowledge and understanding of using digital devices to create media, exploring how they can create stop-frame animations. Following this unit, learners will further develop their video editing skills in UKS2	This unit assumes that learners will have some prior experience of programming; the KS1 NCCE units cover floor robots and ScratchJr.	This unit progresses students' knowledge and understanding of presenting information. It builds on their knowledge of data and information from key stage 1. They continue to develop their understanding of attributes and begin to construct and interrogate branching databases as a means of displaying and retrieving information.	This unit progresses students' knowledge and understanding of creating media, by focusing on the recording and editing of sound to produce a podcast. Following this unit, learners will explore combining audio with video in the 'Video editing' unit in UKS2	This unit progresses students' knowledge and understanding of programming. It progresses from the sequence of commands in a program to using count-controlled loops. Pupils will create algorithms and then implement those algorithms as code.
Resources	Internet, Ipads, Laptops	Access to internet, laptops, iPads, iMotion	Access to internet, laptops, iPads, Scratch,	Access to internet, laptops, iPads, J2data - https://www.j2e.com/help/videos/datags3.	Access to internet, laptops, iPads, Audacity,	Access to internet, laptops, iPads, You can use Turtle Academy online at turtleacademy.com/playground You can download FMSLogo from
Vocabulary	Digital, devices, network, input, process, output (IPO), infrastructure, draw, fill, edit and undo, network switch, server, wireless access point, router, printer/copier Internet, World Wide Web, e-Safety, fake news, website,	Animation, drawings, photographs, images, storyboard, onion-skinning	Blocks, program, sprite, algorithm, attributes	Data, data-base, branching, yes/no questions, binary, pictogram, attributes	Audio, input, output, record, digital, podcast, copy, paste, time shift, volume, microphone, speakers, copyright, headphones,	Repeating, loops, turtle, logo, repeat, algorithm, code, debugging,
Flashback	**IT stands for information technology and includes things such as computers, phones, tablets, printers, digital cameras, smart speakers, Beebots or games consoles.** **IT can be used for lots of different purposes and it is important to choose the right pieces of equipment for a particular purpose.** **We should always follow the rules given to use when using IT so that we can keep ourselves and others safe.**	**The undo button tool can be used to erase mistakes.** **Photographs are taken on devices such as digital cameras, phones and tablets, they can be taken in landscape or portrait mode.** **Photographs are affected by the amount and type of light.** **Photos can be edited using a range of tools including cropping and colour filters.**	**A sequence needs to have a start to run a program. This could be pressing the character or pressing the green flag.** **Different blocks can be used for different purposes. These could be movement blocks, size changing blocks or speaking blocks.** **A sequence can be improved and changed by adding or removing blocks.**	**Groups of objects can be counted and then be compared with one another to answer questions.** **Data can be presented on a computer in a variety of forms including pictograms, block diagram and tally charts.** **That some data can be shared, and other data cannot. It is important that we ask permission before sharing information about others.**	**Music is created by humans and can make people feel emotions – this music can be created digitally on a device.** **How to create pieces of music with a clear rhythm pattern and tempo.** **How to review their work and describe how it makes them feel.**	**A program includes a sequence of commands, and a sequence of program is a process.** **The order of commands effects the output of a program.** **How to program a musical sequence.**
Lesson 1	**WALT**: identify the input and output of digital devices. (Y3 L1-L2) **Activities:** Introduce the concepts of input, process, and output. These concepts are fundamental to all digital devices. Develop their knowledge of input, process, and output and apply it to devices and parts of devices that they will be familiar with	**WALT:** know that animation is a sequence of drawings or photographs **Activities:** Learners will discuss whether they think a picture can move. They will learn about simple animation techniques and create their own animations in the style of flip books (flick books) using sticky notes. **Children will know:** how to draw a sequence of pictures	**WALT:** explore a new programming environment **Activities:** This lesson introduces learners to a new programming environment: Scratch. Learners will begin by comparing Scratch to other programming environments they may have experienced, before familiarising themselves with the basic layout of the screen.	**WALT:** create questions with yes/no answers **Activities:** During this lesson, learners will start to explore questions with yes or no answers, and how these can be used to identify and compare objects. They will create their own yes or no questions before using these to split a collection of objects into groups. **Children will know:**	**WALT:** identify that sound can be digitally recorded **Activities:** In this lesson, learners will familiarise themselves with digital devices capable of recording sound and/or playing audio. Learners will identify devices' inputs (microphone) and outputs (headphones or speakers). Learners will consider ownership and	**WALT:** identify that accuracy in programming is important **Activities:** This lesson will introduce pupils to programming in Logo. Logo is a text-based programming language where pupils type commands that are then drawn on screen. Pupils will learn the basic Logo commands, and will use their knowledge of them to read and write code.

	in their everyday surroundings. Y4 - design a digital device **Children will know:** how to classify input and output devices how to model a simple process design a digital device	how to create an effective flip book—style animation how an animation/flip book works	**Children will know:** the objects in a Scratch project (sprites, backdrops) that objects in Scratch have attributes (linked to) that commands in Scratch are represented as blocks	how to craft questions with yes/no answers make up a yes/no question about a collection of objects how to create two/three groups of objects separated by one attribute	copyright issues relating to the recording of audio. **Children will know:** • digital devices that can record sound and play it back • the inputs and outputs required to play audio or record sound • the range of sounds that can be recorded	**Children will know:** how to program a computer by typing commands the effect of changing a value of a command
Lesson 2	**WALT:** know how digital devices change the way we work and how a computer network can be used to share information. (Y3 L3-4) Activities: learners will apply their learning from lessons 1 by using programs in conjunction with inputs and outputs on a digital device. They will create two pieces of work with the same focus, using digital devices to create one piece of work, and non-digital tools to create the other. (Y4 to be given freedom of which digital tool they will use) Learners will then compare and contrast the two approaches. Learners will also be introduced to the concept of connections and moving information between connected devices. Learners will learn to explain how and why computers are joined together to form networks. **Children will know:** the similarities and differences between using digital and non-digital tools. messages can be passed through multiple connections what a network switch is and why we need it.	**WALT:** To relate animated movement with a sequence of images **Activities:** In the previous lesson, learners created their own flip book–style animations. In this lesson, they will develop this knowledge and apply it to make a stop-frame animation using a tablet. **Children will know:** how to predict what an animation will look like why little changes are needed for each frame how to create an effective stop-frame animation	**WALT:** identify that commands have an outcome **Activities:** In this lesson, learners will create movement for more than one sprite. In doing this, they will design and implement their code, and then will create code to replicate a given outcome. Finally, they will experiment with new motion blocks. **Children will know:** identify that each sprite is controlled by the commands I choose a word which describes an on-screen action for my design how to create a program following a design	**WALT:** identify the object attributes needed to collect relevant data **Activities:** During this lesson, learners will continue to develop their understanding of using questions with yes or no answers to group collections of objects. They will learn how to arrange objects in a tree structure and will continue to think about which attributes the questions are related to. **Children will know:** how to select an attribute to separate objects into groups how to create a group of objects within an existing group how to arrange objects into a tree structure	**WALT:** use a digital device to record sound **Activities:** In this lesson, learners will record their own sounds and play back the recorded audio. They will also listen to a range of podcasts and identify the features of a podcast. **Children will know:** how to use a device to record audio and play back sound how to improve my recording what other people include when recording sound for a podcast	**WALT:** create a program in a text-based language **Activities:** In this lesson, pupils will create algorithms (a precise set of ordered instructions, which can be turned into code) for their initials. They will then implement these algorithms by writing them in Logo commands to draw the letter. They will debug their code by finding and fixing any errors that they spot. **Children will know:** • how to use a template to draw what I want my program to do • how to write an algorithm to produce a given outcome • how to test their algorithm

Lesson 3	**WALT:** know how digital devices are connected and the physical components of a network. **Activities:** introduce key network components, including a server and wireless access points. Learners will examine each device's functionality and look at the benefits of networking computers.. They will see examples of network infrastructure in a real-world setting. Y4 – evaluate the benefits and draw backs of computer networks. **Children will know:** the role of a switch, server, and wireless access point in a network how devices in a network are connected with one another networked devices around me the benefits of computer networks	**WALT:** plan an animation **Activities:** Remind the learners of the animations that we created last week and tell them that next week we will use tablets to animate some of our own stories. Tell the learners that during this lesson they will create a storyboard showing the characters, settings and events that they would like to include in their own stop-frame animation next week. **Children will know:** how to break down a story into settings, characters and events an animation that is achievable on screen how to create a storyboard	**WALT:** know that a program has a start **Activities:** In this lesson, learners will be introduced to the concept of sequences by joining blocks of code together. They will also learn how event blocks can be used to start a project in a variety of different ways. In doing this, they will apply principles of design to plan and create a project. **Children will know:** they can start a program in different ways how to create a sequence of connected commands that the objects in my project will respond exactly to the code	**WALT:** create a branching database **Activities:** During this lesson, learners will continue to develop their understanding of ordering objects/images in a branching database structure. They will learn how to use an online database tool to arrange objects into a branching database, and will create their own questions with yes or no answers. The learners will show that their branching database works through testing. **Children will know:** they can objects to arrange in a branching database how to group objects using my own yes/no questions how to prove their branching database works	**WALT:** explain that a digital recording is stored as a file **Activities:** In this lesson, learners will plan and begin recording their own podcast. They will also discuss the importance of saving their work and save their recordings as a file. **Note:** Due to the amount of time required to plan the podcast content, the written parts of the planning template could be completed in a different subject's lesson (e.g. English, or a subject related to the podcast content). **Children will know:** the content needed for a podcast why it is useful to be able to save digital recordings how to save a digital recording as a file	**WALT:** explain what 'repeat' means **Activities:** In this lesson, pupils will first look at examples of patterns in everyday life. They will recognise where numbers, shapes, and symbols are repeated, and how many times repeats occur. They will create algorithms for drawing a square, using the same annotated diagram as in Lesson 2. They will use this algorithm to program a square the 'long' way, and recognise the repeated pattern within a square. Once they know the repeated pattern, they will use the repeat command within Logo to program squares the 'short' way. **Children will know:** types of repetition in everyday tasks patterns in a sequence how to use a count-controlled loop to produce a given outcome
Lesson 4	**WALT:** recognise how networks connect to other networks for the internet. **Activities**: Learners will explore how a network can share messages with another network to form the internet. They will consider some of the network devices involved in this, such as routers, and then discuss what we should keep in and out of a network to keep safe. They will describe parts of a network and how they connect to each other to form the internet. They will use this to help explain how the internet lets us view the World Wide Web and recognise that the World Wide Web is part of the internet which contains websites and web pages. **Children will know:** the internet is a network of networks that information is shared across a network needs protecting when connected to the internet	**WALT:** understand the need to work consistently and carefully **Activities:** In the previous lesson, learners planned out their own stop-frame animations in a storyboard. This lesson, they will use tablets to carefully create stop-frame animations, paying attention to consistency. **Children will know:** how to use onion skinning to help me make small changes between frames to review a sequence of frames to check my work how to evaluate the quality of my animation	**WALT:** know that a sequence of commands can have an order **Activities:** This lesson explores sequences, and how they are implemented in a simple program. Learners have the opportunity to experiment with sequences where order is and is not important. They will create their own sequences from given designs. **Children will know:** what a sequence is how to combine sound commands how to order notes into a sequence	**WALT:** know why it is helpful for a database to be well structured **Activities:** During this lesson, learners will continue to develop their understanding of how to create a well-structured database. They will use attributes to create questions with yes or no answers and apply these to given objects. The learners will be able to explain why questions need to be in a specific order and will compare the efficiency of different branching databases. **Children will know:** how to create yes/no questions using given attributes that questions need to be ordered carefully to split objects into similarly sized groups how to compare two branching database structures	**WALT:** know that audio can be changed through editing. **Activities:** In this lesson, learners will open their existing work and continue recording their podcast content. Learners will also edit their recordings, for example by changing the volume of the recording or making the recording fade in or out. **Children will know:** how to open a digital recording from a file ways in which audio recordings can be altered how to edit sections of an audio recording	**WALT:** modify a count-controlled loop to produce a given outcome **Activities:** In this lesson, pupils will work with count-controlled loops in a range of contexts. First, they will think about a real-life example, then they will move on to using count-controlled loops in regular 2D shapes. They will trace code to predict which shapes will be drawn, and they will modify existing code by changing values within the code snippet. **Children will know:** the effect of changing the number of times a task is repeated which values to change in a loop how to predict the outcome of a program containing a count-controlled loop

	the internet allows to view the World Wide Web which is the part that contains websites and web pages					
Lesson 5	**WALT:** know how websites are shared across the World Wide Web and how these can be accessed or added to. **Activities:** Learners will explore what can be shared on the World Wide Web and where websites are stored. They will also explore how the World Wide Web can be accessed on a variety of devices. will analyse the contents of websites, before designing their own website, offline. They will consider the content they would like to include on a website of their own, and then decide how they could create that content**.** **Year 4 -** They will then use an existing website to create some of their own content online, using tools introduced in Year 2. **Children will know:** types of media that can be stored on the WWW and how to access this how to add new content to the WWW new content can be created online	**WALT:** review and improve an animation **Activities:** Last lesson, learners created their own stop-frame animations. This lesson, they will evaluate their animations and try to improve them by creating a brand-new animation based on their feedback. **Children will know:** ways to make my animation better evaluate another learner's animation how to improve my animation based on feedback	**WALT:** change the appearance of my project **Activities:** This lesson develops learners' understanding of sequences by giving them the opportunity to combine motion and sounds in one sequence. They will also learn how to use costumes to change the appearance of a sprite, and backdrops to change the appearance of the stage. They will apply the skills in Activity 1 and 2 to design and create their own project, including sequences, sprites with costumes, and multiple backdrops. **Children will know:** how to build a sequence of commands they can decide the actions for each sprite in a program make design choices for my artwork	**WALT:** identify objects using a branching database **Activities:** During this lesson, learners will independently create a branching database that will identify a given object. They will continue to think about the attributes of objects to write questions with a yes or no answer, which will enable them to separate a group of objects effectively. The learners will then arrange the questions and objects into a tree structure, before using their branching database to answer questions. **Children will know:** they can select a theme and choose a variety of objects how to create questions and apply them to a tree structure how to use my branching database to answer questions	**WALT:** that different types of audio can be combined and played together: **Activities:** In this lesson, learners will record additional content for their podcast, such as sound effects or background music. The audio will be combined, or mixed, with their existing digital recordings and exported as an audio file. **Children will know:** sounds that other people combine suitable sounds to include in a podcast how to use editing tools to arrange sections of audio	**WALT:** decompose a task into small steps **Activities:** In this lesson, pupils will focus on decomposition. They will break down everyday tasks into smaller parts and think about how code snippets can be broken down to make them easier to plan and work with. They will learn to create, name, and call procedures in Logo, which are code snippets that can be reused in their programming. **Children will know:** how to identify 'chunks' of actions in the real world how to use a procedure in a program that a computer can repeatedly call a procedure
Lesson 6	**WALT:** recognise that content online is created by people and evaluate the consequences of unreliable content. **Activities:** Learners will explore who owns the content on websites. They will explore a variety of websites, investigating what they can and cannot do with the content on them. They will also relate this to principles of ownership and sharing in the real world. Learners will gain an appreciation of the fact that not everything they see on the internet is true, honest, or accurate. They will review images and decide they may not be real, before conducting a web search which will return ambiguous and sometimes misleading results, looking for	**WALT:** evaluate the impact of adding other media to an animation **Activities:** Last lesson, learners perfected their stop-frame animations. This lesson, they will add other media and effects into their animations, such as music and text. **Children will know:** they can add other media to my animation why I added other media to my animation	**WALT:** create a project from a task description **Activities:** In this lesson, learners will create a musical instrument in Scratch. They will apply the concept of design to help develop programs and use programming blocks — which they have been introduced to throughout the unit. They will learn that code can be copied from one sprite to another, and that projects should be tested to see if they perform as expected. **Children will know:**	**WALT:** compare the information shown in a pictogram with a branching database **Activities:** During this lesson, the learners will compare two ways of presenting information. They will demonstrate their ability to explain what information is shown in a pictogram and a branching database. The learners will begin to compare the two ways of presenting information. **Children will know:** what a pictogram tells me what a branching database tells me	**WALT:** evaluate editing choices made **Activities:** In this lesson, learners will export their digital recordings so that they can be listened to on a range of digital devices. Learners will give feedback on their own and their peers' podcasts, including areas for improvement. **Children will know:** that digital recordings need to be exported to share them the features of a digital recording I think work well	**WALT:** create a program that uses count-controlled loops to produce a given outcome **Activities:** In the final lesson, pupils will apply the skills that they have learnt in this unit to create a program containing a count-controlled loop. Over the course of the lesson, they will design wrapping paper using more than one shape, which they will create with a program that uses count-controlled loops. They will begin by creating the algorithm, either as an annotated sketch, or as a sketch and algorithm, and then implement it as code. They will debug their work throughout, and evaluate their programs against the original brief.

	why this is the case. Finally, learners will complete a practical activity, demonstrating how quickly information can spread, beyond your own control. **Children will know:** who owns the content on websites that there are rules to protect content that not everything on the World Wide Web is true some information I find online may not be honest, accurate, or legal. why I need to think carefully before I share or reshare content (Y4)	they can evaluate my final film	and name the objects I will need for a project relate a task description to a design they can implement my algorithm as code	how to compare two ways of presenting information	how to suggest improvements to a digital recording	**Children will know:** • how to design a program that includes count-controlled loops • how to make use of their design to write a program • how to develop their program by debugging it
Key Knowledge	**Computers are made up of input devices, digital devices and output devices.** **A computer network is made of multiple devices that pass information between each other.** **Information can be shared through mobile networks, wifi (via wireless access points), a network switch and wired connections. A range of media can be added, shared and created on the World Wide Web.** **How to evaluate reliability of content and recognise the consequences of unreliable content**	**Children will know:** **An animation is made up of a sequence of images.** **How to move subjects between capturing images, ensuring the area is set up with an awareness of what will be captured.** **How to review captured images as an animation, removing or adding images to make improvements.**	**Children will know:** **A program includes a sequence of commands, and a sequence of program is a process.** **The order of commands effects the output of a program.** **How to program a musical sequence.**	**Children will know:** **That a branching database is an identification tool.** **How to relate two levels of a branching database using 'AND'** **Real world applications of a branching database.**	**Children will know:** **How to layer multiple sounds so that they play at the same time.** **How to store and retrieve audio files from a computer.** **Audio can be recorded with an input device (microphone) and played with an output device.**	**Children will know:** **A loop command can be used in a program to repeat instructions.** **A loop can be programmed to stop after a specific number of times – this is called a count-controlled loop.** **Tools can be used to allow more than one process to run at once.**